§ 60.44b Standard for nitrogen oxides (NO\(_X\)).

(a) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO\(_X\) (expressed as NO\(_2\)) in excess of the following emission limits:

(5) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, an owner or operator of an affected facility located in a noncontinental area that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.5 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in §60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO\(_2\) or PM emissions is not subject to the PM limits in (h)(1) of this section.

(6) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, an owner or operator of an affected facility located in a noncontinental area that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.5 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in §60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO\(_2\) or PM emissions is not subject to the PM limits in (h)(1) of this section.

(72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009)
Environmental Protection Agency

§ 60.44b

Nitrogen oxide emission limits (expressed as NO$_2$) heat input

<table>
<thead>
<tr>
<th>Fuel/steam generating unit type</th>
<th>ng/J</th>
<th>lb/MMBtu</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Natural gas and distillate oil, except (4):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Low heat release rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) High heat release rate</td>
<td></td>
<td></td>
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<tr>
<td>(2) Residual oil:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Low heat release rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) High heat release rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Coal:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Mass-feed stoker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Spreader stoker and fluidized bed combustion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Pulverized coal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) Lignite, except (v)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v) Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(vi) Coal-derived synthetic fuels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Duct burner used in a combined cycle system:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Natural gas and distillate oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Residual oil</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal or oil, or a mixture of these fuels with natural gas, and wood, municipal-type solid waste, or any other fuel shall cause to be discharged into the atmosphere any gases that contain NO$\text{X}$ in excess of a limit determined by the use of the following formula:

\[
E_n = \left( EL_{\text{ng}}H_{\text{ng}} \right) + \left( EL_{\text{ro}}H_{\text{ro}} \right) + \left( EL_{\text{go}}H_{\text{go}} \right) \\
\frac{H_{\text{ng}} + H_{\text{ro}} + H_{\text{go}}}{(\text{lb/MMBtu})}
\]

Where:

- $E_n$ = NO$\text{X}$ emission limit (expressed as NO$_2$), ng/J (lb/MMBtu);
- $EL_{\text{ng}}$ = Appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/MMBtu);
- $H_{\text{ng}}$ = Heat input from combustion of natural gas or distillate oil, J (MMBtu);
- $EL_{\text{ro}}$ = Appropriate emission limit from paragraph (a)(2) for combustion of residual oil, ng/J (lb/MMBtu);
- $H_{\text{ro}}$ = Heat input from combustion of residual oil, J (MMBtu);
- $EL_{\text{go}}$ = Appropriate emission limit from paragraph (a)(3) for combustion of coal, ng/J (lb/MMBtu); and
- $H_{\text{go}}$ = Heat input from combustion of coal, J (MMBtu).

(c) Except as provided under paragraph (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal or oil, or a mixture of these fuels with natural gas, and wood, municipal-type solid waste, or any other fuel shall cause to be discharged into the atmosphere any gases that contain NO$\text{X}$ in excess of 130 ng/J (0.30 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for natural gas of 10 percent (0.10) or less and is
subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for natural gas.

(e) Except as provided under paragraph (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal, oil, or natural gas with byproduct/waste shall cause to be discharged into the atmosphere any gases that contain NO\textsubscript{X} in excess of the emission limit determined by the following formula unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor to an annual capacity factor of 10 percent (0.10) or less:

\[
E_n = \frac{\left(EL_\text{go}H_\text{go}\right) + \left(EL_\text{ro}H_\text{ro}\right) + \left(EL_\text{c}H_\text{c}\right)}{H_\text{go} + H_\text{ro} + H_\text{c}}
\]

Where:
- \(E_n\) = NO\textsubscript{X} emission limit (expressed as NO\textsubscript{2}), ng/J (lb/MMBtu);
- \(EL_\text{go}\) = Appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/MMBtu);
- \(H_\text{go}\) = Heat input from combustion of natural gas, distillate oil and gaseous byproduct/waste, J (MMBtu);
- \(EL_\text{ro}\) = Appropriate emission limit from paragraph (a)(2) for combustion of residual oil and/or byproduct/waste, ng/J (lb/MMBtu);
- \(H_\text{ro}\) = Heat input from combustion of residual oil, J (MMBtu);
- \(EL_\text{c}\) = Appropriate emission limit from paragraph (a)(3) for combustion of coal, ng/J (lb/MMBtu); and
- \(H_\text{c}\) = Heat input from combustion of coal, J (MMBtu).

(f) Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a NO\textsubscript{X} emission limit that shall apply specifically to that affected facility when the byproduct/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the Administrator, such as NO\textsubscript{X} emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the Administrator to confirm that the affected facility is unable to comply with the emission limits in paragraph (e) of this section and to determine the appropriate emission limit for the affected facility.

1) Any owner or operator of an affected facility petitioning for a facility-specific NO\textsubscript{X} emission limit under this section shall:

(i) Demonstrate compliance with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, by conducting a 30-day performance test as provided in §60.46b(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

(ii) Demonstrate that the affected facility is unable to comply with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under paragraph (f)(1)(i) of this section.

2) The NO\textsubscript{X} emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the Administrator. If the petition is approved by the Administrator, a facility-specific NO\textsubscript{X} emission limit will be established at the NO\textsubscript{X} emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner that the Administrator determines to be consistent with minimizing NO\textsubscript{X} emissions. In lieu of amending this subpart, a letter shall be sent to the facility describing the facility-specific NO\textsubscript{X} limit. The facility shall use the compliance procedures detailed in the letter and make the letter...
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available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(g) Any owner or operator of an affected facility that combusts hazardous waste (as defined by 40 CFR part 261 or 40 CFR part 761) with natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility for a waiver from compliance with the NOX emission limit that applies specifically to that affected facility. The petition must include sufficient and appropriate data, as determined by the Administrator, on NOX emissions from the affected facility, waste destruction efficiencies, waste composition (including nitrogen content), the quantity of specific wastes to be combusted and combustion conditions to allow the Administrator to determine if the affected facility is able to comply with the NOX emission limits required by this section. The owner or operator of the affected facility shall demonstrate that when hazardous waste is combusted in the affected facility, thermal destruction efficiency requirements for hazardous waste specified in an applicable federally enforceable requirement preclude compliance with the NOX emission limits of this section. The NOX emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of (l)(1) of this section, as appropriate, are applicable to the affected facility until and unless the petition is approved by the Administrator. (See 40 CFR 761.70 for regulations applicable to the incineration of materials containing polychlorinated biphenyls (PCB’s).) In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NOX limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(h) For purposes of paragraph (i) of this section, the NOX standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

(j) Compliance with the emission limits under this section is determined on a 24-hour average basis for the initial performance test and on a 3-hour average basis for subsequent performance tests for any affected facilities that:

(1) Combust, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less;

(2) Have a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less; and

(3) Are subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.

(k) Affected facilities that meet the criteria described in paragraphs (j)(1), (2), and (3) of this section, and that have a heat input capacity of 73 MW (250 MMBtu/hr) or less, are not subject to the NOX emission limits under this section.

(l) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction or reconstruction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain NOX (expressed as NO2) in excess of the following limits:

(1) If the affected facility combusts coal, oil, natural gas, a mixture of these fuels, or a mixture of these fuels with any other fuels: A limit of 86 ng/J (0.20 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for coal, oil, and natural gas
§ 60.45b Compliance and performance test methods and procedures for sulfur dioxide.

(a) The SO₂ emission standards in §60.42b apply at all times. Facilities burning coke oven gas alone or in combination with any other gaseous fuels or distillate oil are allowed to exceed the limit 30 operating days per calendar year for SO₂ control system maintenance.

(b) In conducting the performance tests required under §60.8, the owner or operator shall use the methods and procedures in appendix A (including fuel certification and sampling) of this part or the methods and procedures as specified in this section, except as provided in §60.8(b). Section 60.8(f) does not apply to this section. The 30-day notice required in §60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(c) The owner or operator of an affected facility shall conduct performance tests to determine compliance with the percent of potential SO₂ emission rate (% Pₚ) and the SO₂ emission rate (Eₛ) pursuant to §60.42b following the procedures listed below, except as provided under paragraph (d) and (k) of this section.

1. The initial performance test shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the SO₂ standards shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility.

2. If only coal, only oil, or a mixture of coal and oil is combusted, the following procedures are used:

   (i) The procedures in Method 19 of appendix A-7 of this part are used to determine the hourly SO₂ emission rate (Eₜₒ) and the 30-day average emission rate (Eₜₒ). The hourly averages used to compute the 30-day averages are obtained from the CEMS of §60.47b(a) or (b).

   (ii) The percent of potential SO₂ emission rate (%Pₚ) emitted to the atmosphere is computed using the following formula:

   \[
   \%Pₚ = \left(1 - \frac{\%Rₚ}{100}\right) \times \left(1 - \frac{\%Rᵢ}{100}\right)
   \]

   Where:

   %Pₚ = Potential SO₂ emission rate, percent;

   %Rₚ = SO₂ removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

   %Rᵢ = SO₂ removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

3. If coal or oil is combusted with other fuels, the same procedures required in paragraph (c)(2) of this section are used, except as provided in the following:

\[Eₚ = \frac{0.10 \times Hₕₒ}{Hₕₒ + Hᵢ} + (0.20 \times Hᵢ)\]